

**Amendments to The Claims**

The following listing of claims replaces all prior versions and listings of the claims in this application.

**Listing of the Claims**

1-193. (Cancelled)

194. (Currently amended) An isolated recombinant cell that expresses a heteromeric taste receptor, wherein said receptor is comprised of at least one T1R2 polypeptide and at least one T1R3 polypeptide, wherein said T1R2 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 10, (ii) encoded by a nucleic acid sequence comprising a nucleic acid that hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS, or (iii) a T1R2 polypeptide possessing at least 90% sequence identity to the T1R2 polypeptide of SEQ. ID. NO: 6;

and wherein said T1R3 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 9; (ii) encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, 10% SDS; and washing at 65°C in a solution comprising 0.2X SCC and 0.1% SDS, or (iii) a T1R3 polypeptide possessing at least 90% sequence identity to the T1R3 polypeptide of SEQ. ID. NO: 7;

and wherein said isolated cell expresses a heteromeric taste receptor that specifically binds to a ligand that specifically binds to an endogenous (wild-type) human heteromeric T1R2/T1R3 receptor comprised of at least one endogenous T1R2 polypeptide and at least one endogenous T1R3 polypeptide.

195. (Previously presented) The cell of claim 194, which is selected from the group consisting bacterial, yeast, mammalian, amphibian and insect cells.

196. (Previously presented) The cell of claim 194, wherein said cell is a prokaryotic cell.

197. (Previously presented) The cell of claim 194, wherein said cell is a eukaryotic cell.

198. (Previously presented) The cell of claim 197, wherein said eukaryotic cell is a CHO, HEK-293, COS or Xenopus oocyte.

199. (Canceled)

200. (Previously presented) The cell of claim 194, wherein said T1R2 and T1R3 are of the same species.

201. (Canceled)

202. (Previously presented) The cell of claim 194, wherein T1R2 and T1R3 nucleic acid sequences are stably integrated into said cell.

203. (Previously presented) The cell of claim 194, wherein T1R2 and T1R3 nucleic acid sequences comprise an extrachromosomal element.

204. (Previously presented) The cell of claim 194, which comprises T1R2 and T1R3 nucleic acid sequences that are operably linked to a constitutive promoter.

205. (Previously presented) The cell of claim 194, which comprises T1R2 and T1R3 nucleic acid sequences that are operably linked to an inducible promoter.

206. (Previously presented) The cell of claim 194, which further expresses a G protein.

207. (Previously presented) The cell of claim 206, wherein said G protein is G<sub>a15</sub>, G<sub>a16</sub> or gustducin.

208. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has the amino acid sequence of SEQ. ID. NO: 6.

209. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has an amino acid sequence that possesses at least 90% sequence identity to the amino acid sequence of SEQ. ID. NO: 6.

210. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has at least 95% sequence identity to the polypeptide of SEQ. ID. NO: 6.

211. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has at least 96% sequence identity to the polypeptide of SEQ. ID. NO: 6.

212. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has at least 97% sequence identity to the polypeptide of SEQ. ID. NO: 6.

213. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has at least 98% sequence identity to the polypeptide of SEQ. ID. NO: 6.

214. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide has at least 99% sequence identity to the polypeptide of SEQ. ID. NO: 6.

215. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide is encoded by the nucleic acid sequence of SEQ. ID. NO: 10.

216. (Previously presented) The cell of claim 194, wherein said T1R2 polypeptide is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

217. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide has the amino acid sequence of SEQ.ID.NO: 7.

218. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide has an amino acid sequence that possesses at least 90% sequence identity to the amino acid sequence of SEQ. ID. NO: 7.

219. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide exhibits at least 95% sequence identity to the polypeptide of SEQ.ID.NO:7.

220. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide exhibits at least 96% sequence identity to the polypeptide of SEQ.ID.NO:7.

221. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide exhibits at least 97% sequence identity to the polypeptide of SEQ.ID.NO:7.

222. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide exhibits at least 98% sequence identity to the polypeptide of SEQ.ID.NO:7.

223. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide exhibits at least 99% sequence identity to the polypeptide of SEQ.ID.NO:7.

224. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide is encoded by the nucleic acid sequence of SEQ. ID. NO: 9.

225. (Previously presented) The cell of claim 194, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

226. (Previously presented) The cell of claim 194, which expresses a T1R2 polypeptide comprising SEQ. ID. NO: 6 and a T1R3 polypeptide comprising SEQ. ID. NO: 7.

227. (Previously presented) The cell of claim 226, which is a eukaryotic cell.

228. (Previously presented) The cell of claim 227, which is a mammalian, yeast, amphibian or insect cell.

229. (Previously presented) The cell of claim 227, which is a CHO, COS, HEK-293 or Xenopus oocyte.

230. (Previously presented) The cell of claim 229, which is an HEK-293 cell.

231. (Previously presented) The cell of claim 229, which stably expresses said T1R2 and T1R3 polypeptides.

232. (Previously presented) The cell of claim 229, which transiently expresses said T1R2 and T1R3 polypeptides.

233. (Previously presented) The cell of claim 226, which further expresses a G protein.

234. (Previously presented) The cell of claim 233, wherein said G protein is G<sub>a15</sub> and G<sub>a15</sub> or gustducin.

235-255. (Canceled)

256. (Currently amended) An isolated eukaryotic recombinant cell that expresses a heteromeric taste receptor, wherein said receptor is comprised of at least one T1R2 polypeptide and at least one T1R3 polypeptide, wherein said T1R2 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 10, (ii) encoded by a nucleic acid sequence comprising a nucleic acid that hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS, or (iii) a T1R2 polypeptide possessing at least 90% sequence identity to the T1R2 polypeptide of SEQ. ID. NO: 6;

and wherein said T1R3 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 9; (ii) encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9

under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, 10% SDS; and washing at 65°C in a solution comprising 0.2X SCC and 0.1% SDS, or (iii) a T1R3 polypeptide possessing at least 90% sequence identity to the T1R3 polypeptide of SEQ. ID. NO: 7;

and wherein said isolated cell expresses a heteromeric taste receptor that specifically binds to a ligand that specifically binds to an endogenous (wild-type) human heteromeric T1R2/T1R3 receptor comprised of at least one endogenous T1R2 polypeptide and at least one endogenous T1R3 polypeptide.

257. (Previously presented) The cell of claim 256, which is an endogenous taste cell.
258. (Previously presented) The cell of claim 257, wherein the cell is a taste cell present in foliate, circumvallate or fungiform papillae.
259. (Previously presented) The cell of claim 257, wherein the cell is a taste cell present in geschmackstreifen, oral cavity, gastrointestinal epithelium or epiglottis.
260. (Previously presented) The cell of claim 259, wherein the cell is a taste cell present in gastrointestinal epithelium.
261. (Previously presented) The cell of claim 256, which further expresses a G protein.
262. (Previously presented) The cell of claim 261, wherein said G protein is G<sub>a15</sub>, G<sub>a16</sub> or gustducin.
263. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has the amino acid sequence of SEQ. ID. NO: 6.
264. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has an amino acid sequence that possesses at least 90% sequence identity to the amino acid sequence of SEQ. ID. NO: 6.

265. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has at least 95% sequence identity to the polypeptide of SEQ. ID. NO: 6.

266. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has at least 96% sequence identity to the polypeptide of SEQ. ID. NO: 6.

267. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has at least 97% sequence identity to the polypeptide of SEQ. ID. NO: 6.

268. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has at least 98% sequence identity to the polypeptide of SEQ. ID. NO: 6.

269. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide has at least 99% sequence identity to the polypeptide of SEQ. ID. NO: 6.

270. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide is encoded by the nucleic acid sequence of SEQ. ID. NO: 10.

271. (Previously presented) The cell of claim 256, wherein said T1R2 polypeptide is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 10 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

272. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide has the amino acid sequence of SEQ.ID.NO: 7.

273. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide has an amino acid sequence that possesses at least 90% sequence identity to the amino acid sequence of SEQ. ID. NO: 7.

274. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide exhibits at least 95% sequence identity to the polypeptide of SEQ.ID.NO:7.

275. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide exhibits at least 96% sequence identity to the polypeptide of SEQ.ID.NO:7.

276. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide exhibits at least 97% sequence identity to the polypeptide of SEQ.ID.NO:7.

277. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide exhibits at least 98% sequence identity to the polypeptide of SEQ.ID.NO:7.

278. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide exhibits at least 99% sequence identity to the polypeptide of SEQ.ID.NO:7.

279. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide is encoded by the nucleic acid sequence of SEQ. ID. NO: 9.

280. (Previously presented) The cell of claim 256, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS.

281. (Previously presented) The cell of claim 256, which expresses a T1R2 polypeptide comprising SEQ. ID. NO: 6 and a T1R3 polypeptide comprising SEQ. ID. NO: 7.